

WHAT IS CLAIMED IS:

1 1. A method of building at least one stream of
2 smokable material from a mixture containing randomly dis-
3 tributed relatively large first particulate material and
4 randomly distributed relatively small second particulate
5 material including a coarser fraction and a finer frac-
6 tion, comprising the steps of:

7 advancing the mixture against one side of at least
8 one moving belt forming part of a pneumatic conveyor and
9 having a permeability such that the belt entrains the
10 first material but permits at least some of the second
11 material to pass therethrough;

12 thereupon at least partially segregating the
13 coarser an the finer fractions of the at least some
14 second material from each other; and

15 admitting at least some of the segregated coarser
16 fraction into the entrained first material.

1 2. The method of claim 1, further comprising the
2 steps of conveying the segregated finer fraction of the
3 at least some second material in an air stream, and se-
4 parating the finer fraction from the air stream.

1 3. The method of claim 1, wherein the at least
2 one belt moves in a predetermined direction and said ad-
3 vancing step includes feeding the mixture against the
4 one side of the belt in the form of a shower which is
5 elongated in said predetermined direction.

1 4. The method of claim 1, further comprising the
2 step of establishing a suction chamber as a part of the
3 pneumatic conveyor at the other side of the at least one
4 belt to attract the first particulate material against
5 the one side of the at least one belt.

1 5. The method of claim 1, wherein said segregating
2 step includes directing at least some second material
3 against the one side of the at least one moving belt.

1 6. The method of claim 1, wherein said segregating
2 step includes directing the at least some second material
3 against the first material being entrained by the at
4 least one moving belt.

1 7. The method of claim 1, wherein said admitting
2 step includes pneumatically conveying said at least some
3 of the segregated coarser fraction into the entrained
4 first material.

1 8. The method of claim 1 of simultaneously
2 building at least two streams of smokable material,
3 further comprising the step of breaking up the mixture
4 into at least two flows, said advancing step including
5 simultaneously advancing each of the at least two flows
6 against one side of one of at least two discrete moving
7 belts and further comprising the step of dividing the
8 at least some second material which has passed through
9 the at least two belts into at least two masses prior
10 to said segregating step.

1 9. The method of claim 8, further comprising the
2 step of introducing each of the at least two masses into
3 a different one of the at least two streams.

1 10. The method of claim 1, wherein said advancing
2 step includes advancing the mixture against a relatively
3 large first portion of the one side of the at least one
4 belt and said segregating step includes directing the
5 at least some second material against a relatively small
6 second portion of the one side of the at least one belt
7 so that the finer fraction passes through the at least
8 one belt and the coarser fraction moves with the at least
9 one belt, and evacuating the finer fraction at the other
10 side of the at least one belt.

1 11. The method of claim 10, wherein said evacuat-
2 ing step includes entraining the finer fraction in an
3 air stream and further comprising the step of regulating
4 the quantity of air in the air stream to establish at
5 the other side of the at least one belt a constant subat-
6 mospheric pressure.

1 12. The method of claim 10, wherein the belt is
2 arranged to move in a predetermined direction and the
3 at least some second material is directed against the one
4 side of the belt upstream of delivery of first material,
5 as seen in said predetermined direction.

1 13. The method of claim 1, wherein said
2 segregating step includes directing the at least some
3 second material into the mixture advancing against the
4 one side of the at least one moving belt.

1 14. The method of claim 13, further comprising
2 the step of converting the entrained first material into
3 a rod-like filler including removing a first portion of
4 the entrained first material from a second portion at
5 said one side of the at least one moving belt, said
6 directing step including admitting the at least some
7 second material into the second portion of the advancing
8 first material.

1 15. The method of claim 1, wherein the at least
2 one moving belt is arranged to move lengthwise in a pre-
3 determined direction and further comprising the step of
4 imparting to the at least some of the second material
5 a component of movement in said predetermined direction
6 prior to said admitting step.

1 16. Apparatus for building at least one stream
2 of smokable material from a mixture containing relatively
3 large first particulate material and relatively small
4 second particulate material, comprising:

5 transporting means including a pneumatic conveyor
6 having an endless running belt including a first side
7 and a second side, and at least one first suction chamber
8 adjacent one side of said belt and having an outlet;

9 means for feeding at least a portion of the mixture
10 against the other side of the belt opposite said first
11 suction chamber, said belt having a permeability such
12 that it entrains the first material but permits at least
13 some second material to pass into said chamber;

14 means for evacuating second material from the first
15 suction chamber by way of said outlet;

16 means for admitting evacuated second material
17 against at least one of (a) said other side of said belt
18 and (b) the first material being entrained by the belt;

19 at least one second suction chamber disposed at
20 said one side of said belt and arranged to gather second
21 material being furnished by said admitting means and hav-
22 ing passed through the belt due to suction in at least
23 one of said chambers; and

24 means for drawing air and second material from said
25 at least one second suction chamber.

1 17. The apparatus of claim 16, wherein at least
2 one of said material admitting means and said means for
3 drawing air and second material comprises at least one
4 air conveying conduit.

1 18. The apparatus of claim 16, wherein the volume
2 of said at least one first suction chamber greatly
3 exceeds the volume of said at least one second suction
4 chamber.

1 19. The apparatus of claim 16, wherein said at
2 least one pneumatic conveyor further includes means for
3 moving said belt in a predetermined direction, said at
4 least one second suction chamber being disposed upstream
5 of said at least one first suction chamber, as seen in
6 said predetermined direction.

1 20. The apparatus of claim 16, wherein said at
2 least one second suction chamber is disposed in said at
3 least one first suction chamber.

1 21. The apparatus of claim 16, wherein said at
2 least one pneumatic conveyor further includes means for
3 moving said belt in a predetermined direction, said at
4 least one second suction chamber having a first length
5 and said at least one first suction chamber having a
6 greater second length, as seen in said predetermined di-
7 rection.

1 22. The apparatus of claim 16, wherein said at
2 least one pneumatic conveyor further includes means for
3 moving said belt in a predetermined direction, said at
4 least one second suction chamber being spaced apart from
5 said admitting means as seen in said predetermined direc-
6 tion.

1 23. The apparatus of claim 16, wherein said means
2 for admitting the evacuated second material is arranged
3 to discharge second material into said feeding means.

1 24. The apparatus of claim 16, wherein said at
2 least one pneumatic conveyor further includes means for
3 moving said belt in a predetermined direction, said means
4 for admitting the evacuated second material being
5 arranged to discharge second material with a component
6 of movement in said predetermined direction.

1 25. The apparatus of claim 16, further comprising
2 means for monitoring the pressure in said at least one
3 second suction chamber.

1 26. The apparatus of claim 16, further comprising
2 means for monitoring the pressure in said at least one
3 first suction chamber.

1 27. The apparatus of claim 16, further comprising
2 means for regulating the pressure in said at least one
3 second suction chamber.

1 28. The apparatus of claim 16, further comprising
2 signal generating first sensor means for monitoring the
3 pressure in said at least one first suction chamber, se-
4 cond signal generating sensor means for monitoring the
5 pressure in said at least one second suction chamber,
6 control means for processing the signals being generated
7 by said first and second sensor means, and means for ad-
8 justing said air drawing means in response to signals
9 being processed by said control means.

1 29. The apparatus of claim 16, wherein said trans-
2 porting means includes two conveyors each having an end-
3 less foraminous running belt and discrete second suction
4 chambers for each belt, said feeding means including
5 means for dividing the mixture into two fractions, and
6 means for feeding a discrete one of said fractions of the
7 mixture against the other side of each of said belts,
8 said means for admitting including means for directing
9 second material toward the other side of the respective
10 belt at least substantially opposite the respective se-
11 cond suction chamber so that at least a substantial part
12 of the finer fraction of second material having been di-
13 rected against the other side of the respective belt is
14 drawn into the respective second suction chamber.

1 30. The apparatus of claim 29, wherein said means
2 for admitting further includes adjustable means for
3 breaking up second material into a plurality of discrete
4 masses, one for each of said directing means.